

CACTUS AND SUCCULENT JOURNAL

Of the Cactus And Succulent Society
Of America

VOL. IX

DECEMBER, 1937

No. 6



LEFT: Edward Morley, who greatly aided Dr. Rose in his explorations in Ecuador and for whom *Borzi-cactus Morleyanus* was named. RIGHT: Curt Backeberg, author of various books and papers on cactus and the most widely quoted authority of to-day. (See pg. 89).



CACTUS AND SUCCULENT JOURNAL

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OKLAHOMA FALL SHOW

Twenty percent of the awards of the Oklahoma City flower show went to succulent exhibitors. Society members Marjorie Lee, Mrs. R. A. Chubb, Mrs. S. P. Seela, Mrs. W. E. Smeltzer and Mr. Jay E. Gilkey seemed to dominate that section of the show. Special award was given Marjorie Lee of Ariocarpus fame.

A LONE COLLECTOR

Please renew my membership of the CACTUS AND SUCCULENT SOCIETY OF AMERICA for the year 1938. I should like to say how much I have enjoyed your JOURNAL, which has arrived regularly every month.

As I have the only collection of any size in this state, and my nearest cactus-growing neighbors are at Adelaide, nearly 2000 miles away, you will understand that I find the articles and illustrations very helpful both in growing and identifying my plants.

I would be very pleased to exchange notes with any of your local members who might care to correspond with me.

GEORGE E. MARSHALL, M.Sc.

47 N. Beach Road, N. Perth, W. Australia.

EDITOR'S NOTE: We are always glad to publish names of members who would like to contact other collectors. Perhaps there are other members in your vicinity.

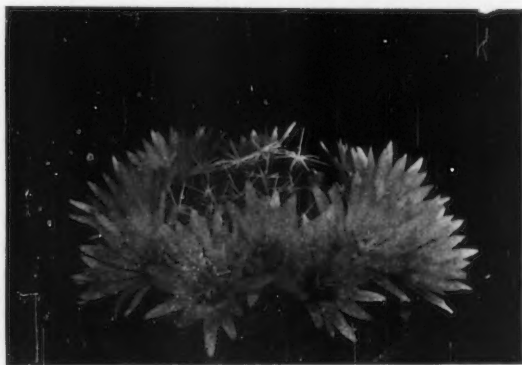
Mr. C. W. Armstrong of Vancouver, B. C., reports snow on Nov. 13th. A month ago he lifted his potted plants, washed the pots and placed them in a shed. 740 pots containing over 700 species besides his plantings in the ground! An industrious grower indeed and one who produces results in healthy, flowering plants. Anyone visiting Canada will be made welcome at his nursery at 3830 West 19th Ave., Vancouver, B. C.

Mr. and Mrs. Editor take this opportunity to thank their fellow Society members for the thoughtful Cactus Scrap Book. The carved design adapted from the JOURNAL cover was most appropriate and the engraved inscription was kind indeed. Thank you all.

A CORRECTION

Kindly exchange the captions of the illustrations on pages 19 and 20 of the August issue, 1937. The illustration on page 19 should be *Echeveria derenbergii* while that on page 20 should be *Echeveria x haageana*. The printer is indeed regretful that this error occurred in Mr. Walther's article "Echeveria Hybrids."

Can you think of a better Christmas gift for that cactus husband, wife or friend than the CACTUS JOURNAL? An appropriate card will be mailed with each gift membership.



SCHWARZ & GEORGI

Apartado No. 7

SAN LUIS POTOSI, S.L.P., MEXICO

Send twenty-five cents for our new illustrated catalog containing 325 different species of Cacti and Succulents.

Mamillaria sphaerica

large yellow flower, blooms very long and easily.



Euphorbia grandicornis Goebel as found on the flats about 11 miles north of Magut, Zululand, near the Pongola River.

Botanical Exploration in South Africa

PART III

By R. A. DYER

While the main spring of the car was under repair in the old fashioned style of welding by the village blacksmith, we packed and dispatched to headquarters the booty collected on the road between Stegi and Gollel. For packing succulents we found discarded cartons of corrugated cardboard invaluable. In addition to the advantage over wooden boxes of lightness they are more flexible and cause less bruising. Firm packing, however, is essential.

Instead of continuing direct to Magut from Gollel, it was decided to retrace our steps, so to speak, to Ingwavuma and by a circuitous route via Pongola River pont at Otobotini to the little settlement of Ubombo and thence to Magut. It will be as well to refer to the map again in a previous article in the June number. As mentioned in the previous article, (Nov. JOURNAL), the flat country a few miles north of Gollel and extending many miles north is literally covered with *Aloe pongolensis*. At the period of our

visit in July* the Aloes were in full flower and *Acacia* trees appeared to be surrounded by a sea of red. There is no possibility of exaggerating the magnificence of the sight and the photos with the previous article give a very inadequate representation. A good colored plate of *A. pongolensis* appeared with Mr. Reynold's description in FL. PLTS. OF S. AFR. 1936, t603.

Travelling eastward from Ingwavuma we descended the Ubombo mountain range, passing en route several colonies of "maculate" Aloes. These appeared to be outliers of the general stream. It appears that the maculate group as a whole has colonized the southern portion of Africa from the Tropics. This took place countless centuries prior to a similar migration by bantu stock from the north. As with the bantu

*Note that the flowering season is exactly opposite from that of the U. S. where aloes flower in December, January and February.

who segregated into tribes and subtribes, so have the maculate Aloes segregated into tribes and strains. For convenience we try, figuratively speaking, to isolate distinctive groups of these Aloes and give them specific rank.

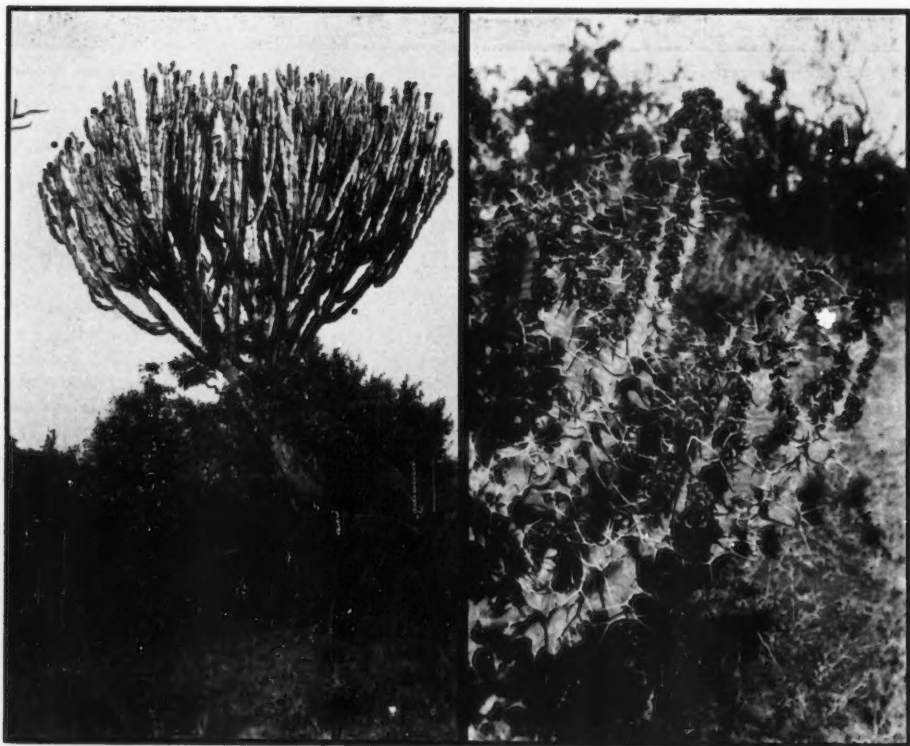
On the Ubombo flats we crossed a small stream and a muddy pool of water was beautified by blue flowers of *Nymphaea stellata*. Somewhat further into the flats, fever ridden during the summer months, we saw for the first time the fever tree *Acacia xanthophloea*. This is almost invariably near water courses (often periodically dry) and is characterized by a soft sulphur-yellow bark. Not far distant were extensive tracts of red-flowered maculate Aloes and in the undergrowth was an abundance of the *Mesembryanthemum*, *Delosperma tradescantioides* L. Bolus var. *lebomboense* L. Bolus (kindly identified by Dr. Bolus herself).

About two miles distant we crossed the Pongola River by pont at Otobotini (see photo in

June JOURNAL). *Aloe Marlothii* was again conspicuous in this area.

Leaving the flats further south we turned in a westerly direction to ascend the Ubombo range once more. Not far from the base a rocky outcrop held out prospects of interesting discoveries. Hardly had we moved from the roadside than we discovered large grotesque tuberous stems of *Pachypodium Saundersii* N. E. Br. with their roots firmly wedged in rock crevices. Some comparatively young plants had not found a secure roothold and several of these were collected for cultivation. At the time they were leafless and spiny, but one has since flowered under cultivation revealing its natural charm and beauty. The species may be seen on plate 123 in FL. PLTS. OF S. AFR. (1925). Two small species of *Crassula* and *Cyrtanthus Galpinii* were among the other plants collected on the same outcrop.

Time as usual was getting short and when night fell we were pushing on through the set-



LEFT: *Euphorbia ingens* in scrub patch on flats 6 miles north of Magut, Zululand.

RIGHT: *E. grandicornis* showing its colorful red fruit.



Acacia xanthophloea known as the fever tree found near Otobotini (Pongola River) N. E. Zululand.
So called because it exudes moisture during warm weather.

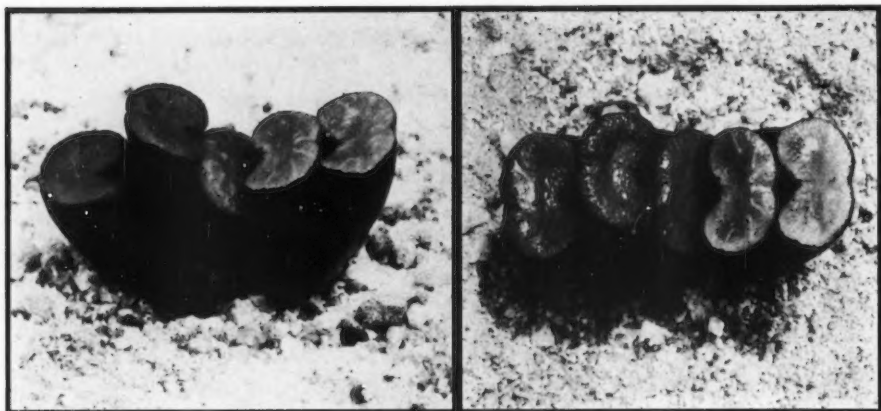
tlement of Ubombo towards Magut. Headlamps were necessary to distinguish the track through the grass and wooded valley. We travelled almost in the hope that nothing interesting would be seen to delay our progress. But an exclamation from Miss Verdoorn—"isn't that a *Euphorbia*?" caused a sudden halt. Our first acquaintance with *E. grandicornis* in the wild was delayed only long enough to secure a good specimen branch for record purposes. Then we set off as fast as possible for Magut, but we were unfortunate in going a few miles off our course, which nearly deprived us of a good and much needed dinner.

The following morning, after the laborious task of packing and dispatching the spoils from Magut, we went north to the Pongola River. Along this short route one passes dense thickets of *Euphorbia Cooperi* on the rocky hillsides; *E. ingens* is seen scattered more on the flats; and in the low bush *E. Tirucalli* flourished and a species which we were unable to investigate thoroughly, but which is probably *E. Evansii* Pax (not of Brown in FL. CAP.). But above all, large quantities of *E. grandicornis* and *Aloe pongolensis*, so that two interests were well satisfied. Cameras and note books were used to advantage and some fine young plants were collected for the home collection.

Euphorbia grandicornis, very aptly named in view of the exceptionally large spines, forms much-branched, dense clumps up to about 6 ft. high, or occasionally taller if supported by bush. A dense thicket of this would be a more effective barrier than the stoutest barb-wire entanglement. The species occurs in the valleys of the Black Umfolosi and Pongola Rivers in Zululand and extends further north into Portuguese East Africa. N. E. Brown in FL. CAP. suggests that *E. breviaristata* Pax, a native of Tanganyika Territory, is not specifically distinct. The branches and size of segments certainly vary considerably, depending partly on the age of the plant and the habitat conditions. A colored illustration by Miss Cythna Letty of fruiting material, collected in this site, appears on plate 642 of FL. PLTS. OF S. AFR. (1937) in part 65 which was entirely devoted to ten species of *Euphorbia*. Previous to this fruits had not been described. In spite of its formidable spines, *E. grandicornis* is not unattractive in flower and when covered with red fruit is decidedly handsome.

It was not until well after midday that we returned via Magut on our way to Louwsberg and Vryheid. What hope was there of reaching our destination without passing a new species of *Aloe* or *Euphorbia* in the dark?

To be continued.



Haworthia truncata Schönl. nat size

Notes on Haworthias

By J. R. BROWN

Haworthia truncata Schönl. *Trans. Roy. Soc. So. Afr.* I (1910) 391. Pl. XXVI.

Plant with long fleshy roots and an extremely short fleshy stem.

Leaves 2-5, in 2 exactly opposite rows, 2-3 cm. long, about 17 mm. wide, fleshy, flattened, ovate-deltoid, truncate, nearly erect, slightly incurved, the faces of the tips somewhat oblong, constricted in the centre, and wrinkled with minute tubercles, the face convex towards the tip, channelled lengthwise and roughened with minute tubercles, the lower sheathing part concave, smooth, and the margins minutely fimbriately toothed, the back convex, lightly channelled lengthwise in the middle and roughened upwards with minute tubercles.

Peduncle erect, slender, simple, with sterile bracts to the base, 20-25 cm. tall including the lax raceme.

Flower bracts ovate-acuminate, membranaceous, 4-5 mm. long, pedicels about the same length. Perianth about 10 mm. long, white, obscurely lined, tube slightly ventricose with bilabiate segments. Style $\frac{1}{3}$ as long as the ovary.

Capsule oblong, 3 angled, 8 mm. long, seeds 3 mm. long, somewhat irregularly 3 angled.

Locality: On a farm, 7 miles from Oudtshoorn, Miss L. Britten B. A. April, 1909.

Haworthia truncata Schönl. is a very remark-

able sp. Plants with bifarious arrangement of the leaves generally have an unusual appearance as is seen in many of the *Gasteria* spp. and in one or two *Aloe* spp. but in this *Haworthia* not only are the leaves bifarious, but also abruptly truncate at the tips. It is a very slow growing plant as it requires the period of an entire year or longer to form a new leaf.

The photo on the left shows the very widely overlapping leaf bases as well as the character of the plant, the photo on the right is a more vertical view showing the appearance of the truncate, windowed leaf tips.

This *Haworthia* belongs to the sect. *Fenestratae* Poelln. The paper by Dr. Schönland, entitled, "On some points in the Morphology and Biology of a new species of *Haworthia*," in which *Haworthia truncata* is described and illustrated is very interesting indeed, touching, as it does, on many of those factors which make the succulent flora of South Africa so fascinating. Mention is made of the ability of this and other spp. of *Haworthia* to withdraw themselves more or less into the ground by means of their contractile roots so that only the more or less windowed tips or faces of the leaves are exposed to the light. The function and structure of these windowed leaves is also discussed. The windowed areas are devoid of chlorophyll and act

as a filter to the strong sunlight, so that the light reaching the assimilating tissue beneath is greatly reduced. One can readily realize that this plant and its near relative *Haworthia Maughani* Poelln. as well as most of the spp. of the sect. *Retusae* Haw. and *Limpidae* Berger, when thus withdrawn into the ground and more or less covered with dust are well adapted to protect themselves against extremely arid conditions and the term, physiological shade plants, as applied to them by Dr. Schönland, is a very apt one.

PRESIDENT'S MESSAGE

Let us pause a moment in these closing days of our ninth year and glance at its outstanding events.

In its early portion our wandering Ecologist, Wm. Taylor Marshall, after many trials and tribulations, completed his rambles in the West Indies and brought us many rare specimens as well as interesting notes. As he releases material for publication, our knowledge of this area will be greatly increased.

While he was absent a tragic event occurred in Southern California which will cause this year to go down in annals of cactologists as "the year of the great frost." It should also be recorded that the subsequent growing season was good and the damage has been repaired save for the few tender species that passed completely out of sight. At this moment the coming year appears to be the "year of the drought."

Dr. R. T. Craig has made several more exploring trips for Mammillarias into the wilds of Sonora and Sinaloa. He has a profusion of new species and varieties to work upon.

Early in the year the Radley-Marks expedition chartered a boat in Guaymas and visited all the islands of the Gulf of California. Several new discoveries were amongst their collections.

George Lindsay has continued his exploring trips into the northern district of Lower California and will soon be a master of the numerous species of that region. James West seems to have lost himself in the mysterious hinterland of South America.

After many days Dr. Helia Bravo's book on the cacti of Mexico has appeared and it really is a volume that should be in every student's library.

Our Society's ambitious tour to visit the Cactus & Native Flora Society of Arizona and the field camping trip into Lower California turned out very successfully with much pleasure and profit to the many participants.

Our Nomenclature Committee has been meet-

ing regularly and though they have not released any papers, they are recording and studying much cactus material, using the resources of the great Huntington Library in San Marino.

We have welcomed four new affiliates: The Cactus and Succulent Societies of Arizona, Milwaukee, Midwest (Cleveland area) and our first overseas affiliate, The Cactus & Succulent Society of Australia. May their association with us be long, pleasant and prosperous.

Editor Haselton has kept up the good work of keeping the JOURNAL in the very fore front of all Society publications. After he completed the task of re-printing Britton & Rose, he took time out to acquire a bride and their honeymoon was spent in the enchanted isles of Hawaii. A thousand good wishes!

Corresponding Secretary Surganty has kept us in touch with our many affiliates and has explained things to many prospective affiliates.

Secretary Denny has been right up to his task and so have the members of the Executive Board. They have traveled many miles and spent many hours on the Society's business without financial recompense.

The one unpleasant cloud upon the scene is, that as I write our worthy President Emeritus, Dr. Arthur D. Houghton, lies seriously ill in the hospital. We trust that he will be speedily restored to strength and help us celebrate our silver jubilee. The CACTUS JOURNAL was started in his home nearly 10 years ago.

After two years of service in the chair, I shall retire to a quiet spot on the Executive Board and leave the administration of affairs to my faithful and capable successor. I trust this will release enough time to prepare for publication some notes on my exploring trips. I thank one and all for loyal support and peaceful, pleasant co-operation.

With a Merry Christmas and a Happy New Year.

HOWARD E. GATES, *Anaheim, Calif.*

WANTED—Mineral collection in exchange for collection of over 200 stemless Mesembs. (85 varieties). This includes 27 different Lithops, 5 Conophytum, 4 Argyroderma, 8 Gibbaea, etc. Many exceptional plants. 5922 Tipton Way, Los Angeles.

FROM MINNESOTA

I enjoy the "JOURNAL" so much, would hardly know how to get along without its wonderful help. You folks are doing a grand job of it and we all owe you a vote of thanks.

I have never seen Minnesota listed as a cactus state, and I'm wondering if you folks in the Southwest know we have cactus here. We have 2 or more varieties of Opuntias growing here in the Minnesota River valley.

I collected several plants once, but I was not greatly interested in cacti at that time and soon discarded them; then too they are quite a thorny type and even though I now have quite a nice collection of cacti and succulents (for this part of the country), I am not a lover of Opuntias, only admitting *O. rufida*, *microdasy*, *stenopetala*, *imbricata* and *Brasiliensis*, to my assortment. I have at present 230 varieties of cacti and succulents.

I tried my first bit of grafting this summer. I have always had trouble getting *Aporocactus flagelliformis* to grow so I grafted some slips to an *Echinopsis* and it is doing nicely, with several new shoots appearing. This grafting I tried for fun to see what I could do and I am very glad I tried it, for I managed to save several choice plants by grafting, which otherwise would have been lost.

I must have had a few plants with nematodes, which had escaped my notice, for they spread to most of my plants in the garden this summer and I had to cut back nearly half of them. Some of the cacti rotted after that and I was very much discouraged for a while, but they say anything worth having is worth fighting for so I'll battle on and save all I can. I managed to save some (that were cut back too severely to obtain good roots again) by grafting. They are doing nicely now.

One bit of good luck I do have is in having room in the greenhouse to set them. They are on a south bench which is watered only from the north side. I always set the desert cacti and succulents which do not want much water over winter on the south side and those types which require more water on north side. Occasionally on sunny days we water those that need it. I think I water about twice a month during Dec., Jan., and Feb.; about 3 or 4 times during March. In April I water quite regularly and by May 15th when we are ready to set them outside they are starting to grow quite nicely.

My *Epiphyllum Ackermannii* started to bloom April 17th this year and I picked the last two faded blooms May 25th.

I had first blooms this year on *Selenicereus macdonaldiae*, three years old; *Opuntia rufida*, five years old; *Stapelia incomparabilis* and *S. desmetiana* both three years old. In previous years I always took all plants out of pots, but this year I planted out several except those that for various reasons are better when left in pots; some Opuntias and Stapelias always seem to drop all the dirt when taken out of pot and it always sets them back. *Chamaecereus silvestrii* always breaks off so easily when handled; and so with many varieties, as we learn these things by experience.

I do envy our friends of warmer climates, who may leave their succulents out over winter. You are certainly saved a lot of work; and then too we must limit our collections to smaller types of plants. My *Aloe arborescens*, *Epiphyllum ackermannii* and variegated century plant being the only large ones I have and when the century gets too big it is discarded for a smaller one.

MRS. LE ROY BUHNER.

IMPORTED PLANTS RELEASED

September 20, 1937.

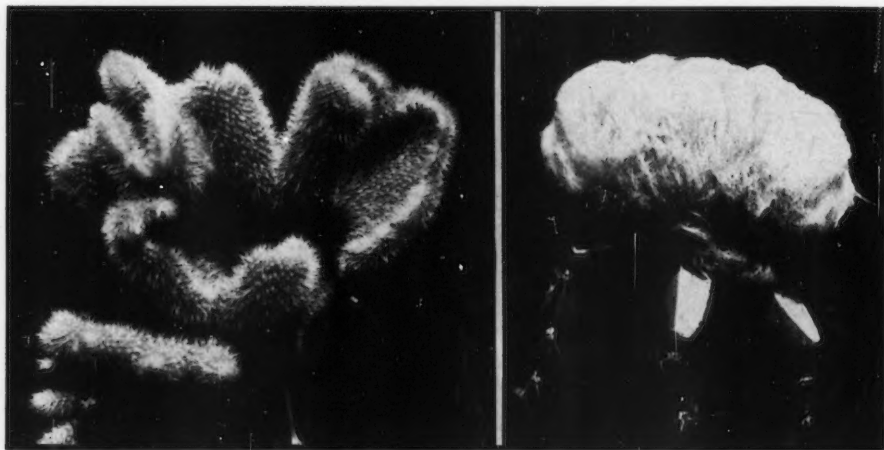
Memorandum of information for importers of plant material which was imported under the provisions of regulation 14 of nursery stock, plant, and seed quarantine No. 37.

Permittees who have imported material which was entered before November 1, 1935, under special permits issued under the provisions of regulation 14 of Quarantine No. 37, and concerning which they have not received individual notification that they were released from the obligations assumed when they applied for such permits, are hereby notified that they are so released. This release does not apply to importations made subsequent to November 1, 1935.

The distribution of the material thus released is still subject to any restrictions, either Federal or State, which may govern the interstate or intrastate movement of such material, or the increase therefrom.

E. R. SASSER,

In Charge, Division of Foreign Plant Quarantines.



Crest of *Aporocactus flagelliformis*, commonly known as rat-tail. RIGHT: Crest of *Espostoa lanata*. From Hummel's Exotic Gardens in which are found the newest importations and many new creations.



Monvillea diffusa discovered by Dr. Rose in 1918.
Photographed by Curt Backeberg in 1936 in memory of the discoverer.

Colored Cereae

By CURT BACKEBERG

Translated by DR. R. W. POINDEXTER

Ever since I saw the bright colored Cereae in the Andes for the first time in 1931 I have made a systematic search for such species. This went hand in hand with my work on the classification of the Cactaceae, in the course of which I repeatedly went through those regions. In this way a number of additional beautiful species were

discovered. I can truthfully say that if my travels had had no other object than this they would still have been an important achievement for the benefit of cactus enthusiasts. I believe I can rightly make the claim of newly discovering or re-introducing the most beautiful and brightest of Cereae.

It is a pity that all these species, perhaps because they were discovered in too rapid succession, are still too little known, even among us here in Germany. Only a few collectors recognized their value promptly, as for instance Dr. Heerklotz in Dresden, who from the beginning grew a collection from seeds collected by me which now contains good sized specimens probably not equaled anywhere and includes all these new species; for those species of which seeds were not available the somewhat round-about method of propagation by grafting was used.

One must have actually seen such a collection of these gay Cereae in order to realize how beautiful they can be. Almost every possible spine color is represented: pink, white, orange, red-brown, brown, golden yellow, blood-red, banded; silky and woolly hairs; bristles in various thicknesses and colors, and in addition the greatest variety of skin colors, such as oil green, black green to blue green, brilliant blue, light green to whitish gray.

I believe a short list of colored Cereae will be acceptable at this time. Distinction must be made between four groups:

1. Mexican Species
2. West Indian Species
3. Brazilian Species
4. Andes Species

Mexican species include beside *Cephalocereus senilis* and *Cephalocereus Hoppenstedtii*, which has already become rare, the beautifully white-frosted *Lemaireocereus Beneckei*, which looks as though it had been powdered over with flour. The Mexican *Pilocereae* are somewhat sensitive to low temperatures just as is the case with the West Indian species. Beautiful species among them are the well-known *Pilocereus chrysacanthus* and *P. Palmeri*, also under the *Pachycereae*: *chrysomalus*, *pecten-aboriginum*, and *Pringlei*,

also *Lemaireocereus Thurberi*.

The West Indians comprise for the most part somewhat slenderer species, which must be protected against low temperatures. As most beautiful among these we find *Pilocereus lanuginosus* with canary yellow spines, dark *Pilocereus strictus*, gray-green *Pilocereus Royenii* as well as the delicate green *Pilocereus barbadensis* and *Moriezianus*, also the very dark green *Pilocereus Fricii*, which has already become rare again. Here and there one comes across gray-blue *Pilocereus Russeliansus* and the splendid very dark *Pilocereus albispinus* with white spines; I rediscovered the latter in 1928. Yet another species should be mentioned here, *Lemaireocereus griseus*, which is quite handsome, especially in the form of young grafted plants; it is scarcely possible to grow it on its own roots.

In the Brazilian species their most beautiful plants are found among the *Cephalocereae* and at the head of these stands that impersonator of *Euphorbia sericata*, *Cephalocereus Dybowskii*. White-spined is *Stephanocereus leucostele*; *Cephalocereus purpureus* and *C. polyanthus* are perhaps hardly obtainable. *C. Dybowskii* is quite plentifully propagated. It has shown itself of late to be quite easy to grow as seedling plants, while collected plants are difficult to acclimatize and, as is the case with *Cleistocactus Straussii*, usually die during transportation. Also beautiful are a few Brazilian *Pilocereae*; for example, the splendid, blue-frosted *Pilocereus Bradii*, *glaucobrous*, *glaucescens* and *pianhyensis*; the effect of these is heightened by the coffee-brown, light yellow or golden spine color.

However, all the above mentioned species are exceeded by the Andes species. It appears as though nature had unfolded all her fantasy in the Andes to produce a long series of the most beautiful of all Cereae. I shall separate these according to color:

White haired:

(a) Silky haired:

Euphorbia sericata without long central spines.

Euphorbia lanata, with yellow, ivory, or blood-red spines and long central spines; the hairs are also frequently light golden yellow.

(b) Matted hairs (like cotton):

Pseudoeuphorbia melanostele and var. *inermis* (identical with the following?)
Cereus climaxanthus (genus?)

(c) Tufted white hairs:

1. With crown cephalium: *Morawetzia Doelziana* (reddish spines).

2. Without crown cephalium:

(a) With thick wool: *Oreocereus Trollii*.

(b) Loose white hair, stout: *Oreocereus Celsianus*, *Oreocereus Hendrik-*

senianus (brown above), *Oreocereus fossulatus* (slightly hairy, slender, amber spines).

Forming soft, long bristles at time of flowering:

(a) Golden yellow:

Seticereus (formerly *Binghamia*) *icosagonus*.

(b) Brown:

Seticereus Humboldtii and *ferrugineus* a new species as well as varieties.

Dark green with golden brown spines:

Gymnanthocereus (?) *microspermus*, a splendid species; becomes quite bare in age.

Yellow, brilliant spine colors:

Haageocereus pacalaensis, *laredensis*, *pseudomelanostele*, *chosicensis*, *aureispinus*.

Mixed spine colors:

Haageocereus decumbens and *australis*.

Straw colored spines:

Cleistocactus Morawetzianus (dull gray!)

Rusty brown and reddish fine spines:

Seticereus Humboldtii and *ferrugineus*, *Haageocereus versicolor*, *pacalaensis*, *acanthus* and *Olowinskianus*, *Cleistocactus Buchtienii*, *Borzicactus Morleyanus* and *Ventimigliae*.

Silver to platinum gray spines:

Thrixanthocereus Blossfeldiorum with black central spines.

Large, high, felted areoles:

Neoraimondia macrostibas, *Trichocereus cephalomacrostibas*, the latter a beautiful dark green, both with ferocious, long spines, especially the latter.

Bright, long-spined species:

Corryocactus brevistylus, *brachypetalus* (the longest of all spines), *Eulychnia acida* and *iquiquensis*, fast-growing, leaf-green, with pale spines: *Corryocactus melanotrichus* and the *Erdisias*.

Blue and gray-blue-green species:

(a) Blue frosted, spineless: therefore peculiarly beautiful as plants: *Trichocereus Pachanoi*.

(b) Lead-colored-gray-green, not frosted, dull, unchanging color: *Armatocereus laetus* and *matucanensis*.

Joint-forming:

Similar to *C. Ghiesbreghtii* (which was probably also an *Armatocereus*).

Armatocereus Godingianus, rare, forming very beautiful pink-yellow young spines.

Species blooming even as young plants with beautiful carmine or brick-red flowers:

Borzicactus Morleyanus (flowers purple violet within and described by Dr. Rose as very beautiful).

Borzicactus sepium, *Websterianus*, a new species, and *Roetzlii* (the latter is a good species, as I demonstrated beyond any doubt), also *Loxanthocereus eriotrichus* and *acanthurus* as well as *Morawetzia*.

NOTE: By young plants, I mean plants from 25 cm. to 40 cm. long, which can be produced comparatively fast by means of grafting.

In the above list I believe I have given a general view of one of the most interesting sections of cactus collecting. If for instance botanical gardens should succeed in securing large collections of these species with a definite end in view, not only would they become in the course of time, a leading attraction, but the unexampled beauty of these unique plants, would convert many visitors

to cactus collecting. Our botanical gardens have a duty here which is not always recognized.

In any case, a collection of this kind of Cereae is most attractive because the columnar form in contrast with the spine and skin colors gives the plants a unique character, and this is to a large extent the basis for their effectiveness, particularly in well arranged groups.

My 1937 expedition to Ecuador and northern Peru was concerned directly with these early-flowering and bright-colored species of *Cereae*. I was successful in collecting the entire genus *Borzicactus* which belongs with the freest flowering of *Cereae*, and to discover a new species and to find out that *Borzicactus Roezlii* is a perfectly valid species.

An outstanding success was the collection of seeds and plants of *Trichocereus Pachanoi*, which may unquestionably be regarded as the ideal grafting stock and is not approached by any other, to say nothing of the fact that it is practically spineless, therefore pleasant to graft on.

The brightly colored *Cereus microspermus* in my collection has now formed flower buds which are entirely naked. Here we have probably a second *Gymnanthocereus* (see BFK, appendix 15, 1934-7), which is very interesting. This is another vindication of the trick of collecting branches with mature heads, even though they show no signs of flowers. After they are in cultivation, spraying them with warm water often

forms flowers which can be observed at leisure. If plants which are 26 to 33 ft. high are chopped down in the field, they are broken to pieces so badly that flowers which may have been at the top are frequently useless.

The most pleasant experience on my last trip was my stay in Huigra where the elderly New Zealander, Mr. Edward Morley, still lives. It was for him that Dr. Rose named *Borzicactus Morleyanus*. He still enjoys good health and vigor and remembers vividly Dr. Rose's visit and tells how Dr. Rose made many excursions into the surrounding country with his peones and how Dr. Rose was also interested in all sorts of things other than cacti. At this point, Dr. Rose found not only *Borzicactus Morleyanus* with its beautiful flowers, but also the rare *Armatocereus (Lemaireocereus Br. & R.) Godingianus* (Br. & R.) Bckbg. which I now collected again. This plant is interesting not only because it forms new joints each year instead of growing continuously, but also because it has pretty, honey-colored, new spines which are in pleasing contrast to the older joints.



1. *Echeveria x pulv-oliver*; first flowers, app. x 0.2

2. *Echeveria x pulv-oliver*; older plant with evidence of further hybridizing, app. x 0.2

Echeveria Hybrids

By ERIC WALTHER, Botanist Golden Gate Park

Echeveria x pulv-oliver EW. new hybrid.

PARENTS: *E. pulvinata* Rose x *E. harmsii* F. Mc-Bride.

ORIGIN: Deliberate cross of V. Reiter, Jr., 1932.

KEY-POSITION: Near *E. harmsii*, by reason of the large corolla, but distinct in appressed sepals, many-flowered scapes, much longer hairs, etc., also somewhat resembling *E. pulvinata*, but

differing in larger corolla, slightly spreading sepals, relatively thinner and more acute leaves and bracts.

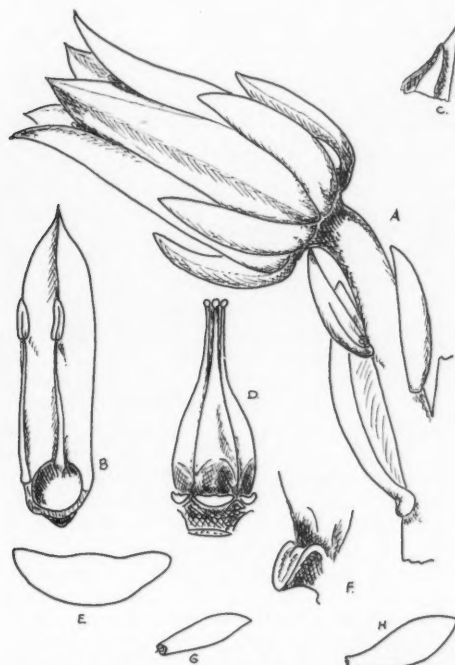
DESCRIPTION by EW., based on first plant to flower in collection of the originator:

Plant densely hairy in all external parts; hairs mostly colorless, only on old stems and base of peduncle russet, multicellular, uniseriate; Stem evident, finally to 10 cm. high, branching from the base; leaves laxly aggregated near end of branches, erect to spreading, thick, rhomboid-oblancoate, app. 5 cm. long by 2 cm. broad, apex thickly-acute, shallowly concave above, rounded beneath, at base narrowed to short nearly terete petiole 5 mm. wide, color cosse-green to lime-green in age, edged and tipped with walnut-brown in sun; inflorescences two to many, erect to ascending, 15-20 cm. long, equilaterally racemose; peduncle decurved to erect above, stout, light-pinkish-cinnamon above; lower bracts many, ascending-spreading, obo-

vate-cuneate, acutish, app. 4 cm. long by 12 mm. broad, thick, nearly flat on both sides, colored as leaves; flowers 6 to 8; upper bracts as lower, but smaller, narrower, shorter than pedicels; these to 3 cm. long or more, clearly bibracteolate, the bracteoles narrowly-ovate, shortest only 1 cm. long, incurved, colored as sepals, these more or less appressed or very little spreading, narrow-deltoid-lanceolate, acute, subterete, subequal, longest 16 mm. long, color cosse-green tipped Hay's-russet; corolla to 28 mm. long, 13-14 mm. thick near base, 12 mm. wide at mouth, sharply pentagonal, color coral-red, sometimes a little darker in one form; segments narrowly-oblong, acute, thick, keeled, apiculate, deeply hollowed at base, color within warm-buff; stamens 16 mm. long; carpels 18 mm. long, nearly white; styles long and slender, colored bordeaux at the capitate stigmas, paler to base; scales to 3.5 mm. long, thick, truncate, reniform to lunate, buff-yellow.

REMARKS: While in this hybrid the large corolla of *Oliveranthus* has been successfully combined with the more numerous flowers and stronger vigour of *E. pulvinata*, the indifferent color of the corolla, partially hidden by the too obvious, appressed sepals, prevents this from being the finished product ready for marketing. However, further improvement may become possible, more easily perhaps when the plant ceases to be sterile as far as production of seed is concerned.

CACTUS—by van Laren. Contains 140 pictures in full color of correctly named cacti. Written for the amateur as an introduction to these fascinating plants. Order now while still available. \$5.00



- 3a. *Echeveria x pulv-oliver*; sideview of single flower, app. x 1.7
 b. *Echeveria x pulv-oliver*; inside of petal, x 1.7
 c. *Echeveria x pulv-oliver*; tip of petal, x 7.
 d. *Echeveria x pulv-oliver*; carpels, x 1.7
 e-f. *Echeveria x pulv-oliver*; nectary, x 7.
 g. *Echeveria x pulv-oliver*; bract, x 0.3
 h. *Echeveria x pulv-oliver*; leaf, x 0.3

STUDY GROUP

Announcing the formation of a new class for the study of cacti. Six months course starting Thursday, January 6, at 7:30 p. m.

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We wish to announce that we are retiring from the cactus seed business and want to thank all our past customers for their valued patronage during the past years. Also, that we are transferring our entire stock of fresh 1937 crop seeds to Mr. R. W. Kelly, 2410 La Rosa Drive, El Monte, California, U. S. A., to whom we are pleased to refer you for your future requirements for cactus seeds. Schwarz & Georgi, Apartado Postal No. 7, San Luis Potosi, S.L.P., Mexico.

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R. W. KELLY

2410 La Rosa Drive, El Monte, Calif.



Habitat of *Myrtillocactus cochal*, San Carlos Canyon, Lower California.

Society Pilgrimage

By G. R. MARTIN, Santa Ana, Calif.

The pilgrimage of the Society into Mexico over the Labor Day weekend brought to mind the words of Byron:

*There is a pleasure in the pathless woods,
There is a rapture on the lonely shore,
There is a society where none intrudes,
By the deep sea and music in its roar:
I love not man the less, but Nature more.*

Truly, our genial guide, President Gates led the party through "pathless woods" to reach that bit of wild paradise known as San Carlos Hot Springs and from thence to the beautiful crescent shaped "lonely shore" under the shadow of Punta Banda.

At noon on Saturday the clan began to gather in Ensenada, Baja California, where a Chinese restaurant, a German bakery, an Italian hotel, a Russian colony, a Norwegian camp, an assortment of U. S. tourists and a few others constitute a foreign settlement in old Mexico.

Shortly after the ascent of the rugged San Carlos Canyon was started, President Gates made a stop at the foot of a mountain literally covered with large cactus and succulents. The entire party quickly clambered over and around the rocks. When called to continue the journey, the members requested that another stop be made on the way out of the canyon. Much wild life and many beautiful flowers were observed all the way up to the camp which was reached in time to allow an inspection of the precipitous mountain sides that completely isolated the camp with the exception of the 'pathless' woods which fringe a beautiful stream winding down through the mountains, but which never reaches the ocean because it is absorbed by farms at the mouth of the canyon.

The next morning was spent searching for the many species, bathing in the hot springs, and breaking camp for the trek to the ocean.

The shore camp was on a large flat where immense clumps of *Machaerocereus gummosus* grew in the company of many smaller kinds.

There were hot springs at this camp, too; one being on the beach where it was observable at low tide, but completely covered at high tide. Good fishing, bathing, boating, the collection of beautiful shells and other interesting objects rounded out an exceptional holiday.

In addition to the "attractions" listed in the prospectus, the enjoyment of viewing so many varieties of plants in their native habitat and the pride of gathering choice specimens by those holding permits, gave a new zest to the lover of cactus and succulents.

On the way down and on the return, rare and and imposing pictures of Dudleyas were presented by hundreds, flour white, silhouetted against the dark rock background of the mountain slopes.

Having in mind the trip to Arizona in May and the present visit in Mexico, the writer feels that members of the Society living at a distance from Los Angeles would experience new thrills and pleasures to say nothing of educational advantages by arranging their vacation programs to include one or more of the splendid pilgrimages to cacti haunts. President Gates gave freely of his long and valuable experience and was ever solicitous of the welfare of the entire caravan. Assistants, able and willing, contributed generously to the enjoyment and satisfaction that pervaded the entire party. The weather was made to order and not a single untoward incident marred the entire pilgrimage.

As the Sahuaro made an unforgettable picture on the Arizona trip, the huge clumps of *Machaerocereus* and *Myrtillocactus* in Mexico stamped themselves indelibly in the minds of all.

Notes from the "Little Red Book."

Everybody considerate. A most important factor where a number of persons are travelling together.

"Senor" Gates lived up to only half the old adage. He was the first to rise, but the last to bed.

Bill Marshall made a real marshal. Policed camp and reported "what?" regularly. Even shaved every morning! Why?

Boy! Did that man Mark have an eye for plants. Verily and he found a new Agave variety.

Mrs. Phillips of San Juan Capistrano worked just as hard and ran him a close second.

The whole Musser family of Anaheim knows how to enjoy themselves and did.

Mrs. Flickinger and her party from Highland Park investigated everything in sight.

The Kellys of El Monte enjoyed life in the trailer but found seed picking poor as it was off season.

It is hard to say whether young Malone from River-

side or his sweet-heart and family enjoyed the trip most, but all seemed happy.

The Doctors Kennedy of Long Beach gave a new version of the old hare and tortoise fable.

Mr. and Mrs. Tate of Los Angeles with the family including the youngest expeditionaire were in the thick of everything after an exploring trip to Hamilton's Ranch.

Mr. Harbison and mother from National City collected flowers, chased butterflies and never rested.

The Phillips of Famosa climaxed a vacation trip to Ensenada by joining the party.

If the Beahm and Rogers families missed anything none of the rest noticed it. Their's was the best catch of fish and did the aroma from the frying pan sharpen appetites?

Joe Grijalva and his partner concentrated on seeds, but kept open eyes for everything else that was interesting.

A certain young lady was always going into the springs or the ocean or just coming out. Wonder if the object is the next Olympic swimming championship.

Heavy shoes did not prevent a host of spines from entering the ankle of one of the lieutenants. No sir! A spiny brute rolled against his socks before they were donned.

Ed. Note: Mr. Gates complains that Martin's new boots scared all the snakes away so he could not have his favorite dish of fried rattler.

MIDWEST CACTUS AND SUCCULENT SOCIETY

The August meeting marked the first anniversary of our society, ending a year of activity of which we are quite proud. Starting from scratch under the able leadership of Mr. John E. C. Rodgers of Lorain, Ohio, the Midwest Cactus and Succulent Society now boasts of forty-one members all of whom are enthusiastic lovers of cacti and succulents. Our meetings during the past year were well attended, and made very interesting by the members at whose homes the meetings were held.

At the June meeting, Dr. J. F. Machwart of Parma, Ohio, was appointed chairman of a committee to record all blooming plants raised by the members, noting all of its characteristics and time of bloom in this section. We hope to make this a permanent record.

At the election of officers, held in August the following members were elected:

Mr. Walter A. Rutter, *President*.

Mr. Aren T. Casey, *Vice-President*.

Dr. James F. Machwart, *2nd Vice-President*.

Mrs. Flora N. Trapp, *Secretary-Treasurer*.

ILLUSTRATED GLOSSARY

The many inquirers for the Illustrated Glossary in pamphlet form will be glad to know that the first sections will be enlarged and revised and will be reprinted in the center of the JOURNAL so that they may be removed for binding.

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| <i>Echinocereus pulchellus</i> | .35 |
| <i>Gymnocalycium platense</i> | .35 |
| <i>Euphorbia ingens monstrose</i> | .35 |
| <i>Esposita lanata</i> | .35 |
| <i>Porfiria schwartzii</i> | .50 |

Complete, \$3.00

Crests of: *Chilena heteracantha*, *Lobivia aurea*, *Echinopsis ancistrophora*, *Parodia chrysacanthion*, *Cephalocereus palmeri*. Yes, we have them.

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